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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,914	03/24/2004	Ferencz S. Denes	032026-0734	3966

23524 7590 11/30/2006

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EXAMINER

LE, HOA T

ART UNIT PAPER NUMBER

1773

DATE MAILED: 11/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/807,914

Applicant(s)

DENES ET AL.

Examiner

H. T. Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 38-42 and 44-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 39-41, 44, 45, 53 and 54 is/are allowed.
- 6) ☒ Claim(s) 38, 42 and 46-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Election/Restrictions

2. In view of Applicant's argument, claims 38, 42 and 46-52 are rejoined for examination.

Claim Objections

3. Claims 38 and 52 are objected to because of the following informalities: Line 4, "polyester terephthalate" appears to be a misnomer. Is it intended to mean polyethylene terephthalate (PET)? Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. Claims 38, 42, 46-52 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The substrate surface has first to be plasma-functionalized is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). As disclosed in the present specification at page 17, paragraph [0056], especially:

"The methods may also be used to functionalize inert polymeric substrates, such as acetal, polyethylene, polypropylene, polyester terephthalate (PET) [*sic*] and polytetrafluoroethylene (PTFE) substrates, that cannot be functionalized efficiently with conventional wet chemistry approaches."

Clearly from this passage, conventional wet chemical functionalization is insufficient to promote surface reactivity of these inert polymeric substrates. These inert polymeric substrates are required to be plasma-functionalized as described in the present application in order to adequately form active sites thereon. Accordingly, claims 38, 42 and 46-52, which fail to include such feature, namely surface-functionalization by plasma of the polymeric substrates, are deemed broader than the enabling scope of the disclosure.

5. Claims 38, 42 and 46-52 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The subject matter of claims 38, 42 and 46-52 is queried because it is confusing. The claim(s) is directed to a carbon-containing surface but the first element, "polymer surface", is already a carbon-containing surface because polymer contains carbon.

Claim 38 further contains an improper Markush member: Line 3, "acetal" is not a polymer. Claim 52 suffers the same deficiency of claim 38.

Other claims are deemed indefinite in view of their dependency upon claim 38.

Claim Rejections - 35 USC § 102

6. Claims 38, 42 and 46-52 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over McCain (US 4,737,544).

Claim 38: McCain teaches an article comprising a polymer substrate surface, a spacer chain, and a biomolecule. See col. 3, lines 27-42. The spacer covalently bonds to the substrate surface and the biomolecule. See col. 5, lines 45-51 and col. 8, lines 53-57. The polymer

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substrate comprises methacrylate, carbonate, or styrene polymer. See col. 4, lines 66-68; col. 5, lines 25-26 and 31-32; and col. 10, lines 1-6. The spacer includes 1,4-butanediol diglycidyl ether (col. 9, lines 49-51).

In the alternative, McCain suggests materials for the polymer substrate include all polymers and copolymers that are “nontoxic for animal including human, use” (col. 5, lines 37-40). Therefore, one having ordinary skill in the art would have found it obvious to select the claimed polymeric materials for the polymeric substrate in the product of McCain because such polymeric materials fit the non-toxic condition as recommended by McCain. Claims 42, 46 and 47: The spacer is disclosed to be extended from the surface of the support and held outward away from the support to attach the biological molecule (col. 8, lines 36-45); therefore, it inherently forms a chain length as at least as claimed.

Claims 48-50: col. 6, lines 1-7.

Claims 51-52: See col. 4, lines 66-68; col. 5, lines 25-26 and 31-32 and col. 10, lines 1-6.

Allowable Subject Matter

7. Claims 39, 40, 41, 44, 45, 53 and 54 are allowed for the reasons set forth in the last office action.
8. References not relied upon are cited as art of interest.
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to H. T. Le whose telephone number is 571-272-1511. The examiner can normally be reached on 10:00 a.m. to 6:30 p.m., Mondays to Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on 571-272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



H. T. Le
Primary Examiner
Art Unit 1773

November 22, 2006